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Two Cases of Laparo-Elytrotomy, with Remarks.

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TWO CASES OF LAPARO-ELYTROTOMY, WITH REMARKS.

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CASE I.—On September 1, 1883, I was requested by Dr. Joseph Healy to see with him a case of labor in deformed pelvis. The patient was an Irishwoman, forty years of age, of medium height and somewhat masculine figure, and a primipara. Labor-pains had begun one week before, at full time, but had not apparently been severe till the end of the week. The membranes had ruptured August 25th.

On examination, I found the following conditions, which had already been noted by Dr. Healy, and by Dr. F. B. Green, who was also in attendance: The pelvis approximated the male type. The symphysis pubis was deep, the subpubic angle narrow, and the bis-ischial diameter measured 2¾ inches. The brim was also smaller than normal.

The fetal head, which was of more than average size, offered above the brim in R. O. A. position, and partially extended. The right arm was folded over the head and presented in advance of it; the patient was exhausted by long labor and by attempts to replace the arm and deliver. Forceps had been tried, but, owing to the narrowness of the pelvic outlet, could not be applied, and version, too, had been found impracticable. The uterus was in a state of spastic rigidity, and the passages were edematous.

In this condition of affairs the choice of procedures lay between craniotomy and delivery by abdominal section. It was evident that craniotomy would be a tedious and difficult operation, and all agreed in preferring laparo-elytrotomy to Cesarean section. This operation was accordingly done, with the assistance of Drs. Healy, Green, and F. A. Jewett.

The operation was extremely easy; no complication or diffi-

culty was experienced except some delay in extracting the child. The primary incision was made on the right side parallel with Poupart's ligament, a little more than an inch above it, and extended from a point one inch above the anterior-superior spine of the ilium to within one inch and three quarters of the pubic spine. The muscles and the transversalis fascia were divided, layer by layer, on a grooved director. Two or three small vessels were ligated, as holding-forceps were not at hand. The peritoneum was exposed, detached from the iliac fascia, and pressed upward till the lateral wall of the vagina was reached. The ureter was readily identified, lifted, and held with a retractor in the inner angle of the wound. The vagina was opened on an obturator, an inch and a half below the cervix, with the Paquelin cautery, and torn in the usual manner with the fingers. The child was extracted by the head, below the ureter. The uterus contracted promptly, and the placenta was soon expelled.

The bladder was injected with milk and water and found intact; the ureter was also uninjured. A perforated glass drainage-tube was passed down through the inner angle of the wound into the vagina, and the wound was closed with sublimated silk sutures. A partial antisepsis was observed.

The child, a well-developed male, died before delivery. The large size of the fetal head will appear from the following measurements:

Bi P	4	inches.
O. F	5½	"
O. M	6	"

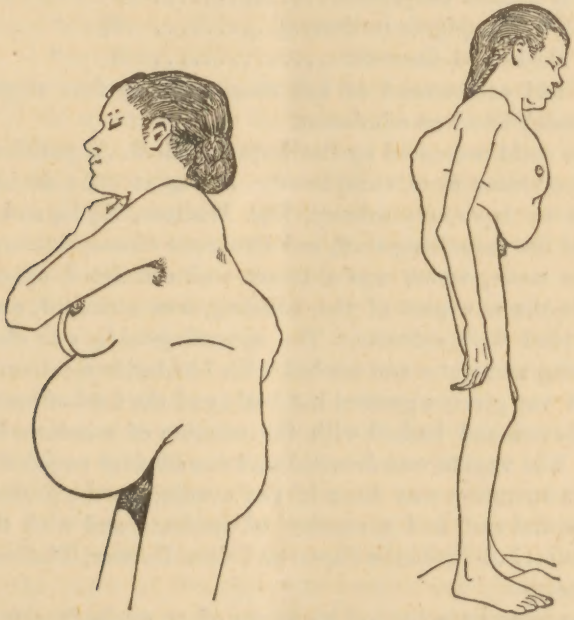
The operation was done in a crowded tenement-house. The surroundings and the after-care of the case were bad; yet, despite all this and the fact that the patient was made drunk with whisky by her friends within a few hours after delivery, the case promised well for the first two days. The temperature averaged about 100° Fahr., with slight oscillations, and the pulse ranged from 95° to 120°. The pulse and temperature then ran rapidly up, and the patient died, at the end of seventy hours after the operation, apparently from the effects of exhaustion and a rapidly developed septicemia. Since a thorough

irrigation of the wound had been maintained, the source of the septic absorption was believed to be the uterine cavity.

An autopsy could not be obtained.

Case II.—A. J., twenty-four years of age, born in this country of Irish parents, was admitted to the Long Island College Hospital, January 26, 1885.

This woman was pregnant for the first time, and was in good general health. She was a dwarf, measuring four feet five inches and three quarters in height, and was deformed from the effects of Pott's disease occurring in infancy. A well-marked kyphosis extended from the fourth dorsal vertebra to the sacrum. A cicatrix just above Poupart's ligament on the



right side marked the point of rupture of a spinal abscess which was said to have discharged for a period of two years. The iliac crests were on a level with the lower border of the ribs and the most prominent vertebral spine. The abdomen was extremely pendulous. The external deformities are well

shown in the accompanying figures, drawn by Dr. R. L. Dickinson from photographs which were taken, one on admission and the other just before discharge.

The pelvis was deformed, though not of a strongly marked kyphotic type. The brim was ample and but slightly distorted. The outlet was narrowed by a marked approximation of the ischial bones, and the coccyx, which was ankylosed, projected forward at nearly a right angle with the sacrum.

The general character of the pelvic deformity will best appear from the following measurements:

External conjugate diameter.....	7¾ inches.
Between iliac crests.....	10½ "
Between iliac spines.....	7¾ "
Diagonal conjugate.....	5 "
True conjugate (estimate).....	4½ "
Bis-ischial diameter.....	2 "

Labor had commenced at full time, and the first stage was fairly established on admission.

The child presented by the vertex in R. O. A. position, and the membranes were unruptured. It was at once decided to deliver by laparo-elytrotomy, Drs. Wallace, Hyde, and Hopkins, of the consulting staff, and Professor Skene, concurring.

The room, which was a large, well-ventilated operating-room in the new part of the building, was scrubbed, and was disinfected with chlorine. The operating-table was cleansed with soap and water and washed with bichloride solution. The patient was given a general hot bath, and the field of operation was shaved and bathed with the solution of mercuric bichloride. The vagina was douched and the bladder emptied.

The operation was done in the evening in the presence of the hospital staff and a number of students, and with the aid and counsel of Professor Skene and Drs. Palmer, Thallon, and Dickinson.

The parts were lighted by means of an oxyhydrogen apparatus, managed by Messrs. Van Cott and Smith, of the medical class. The os, thin and dilatable, with a diameter of about one inch and a half, was fully dilated by Dr. Dickinson with the hand. The external incision was made on the right side, about five inches in length and a full inch above Poupart's ligament.

Some difficulty was experienced in identifying the peritoneum, owing to a considerable degree of old inflammatory thickening, and the peritoneum was snipped through at one point. The minute opening was immediately closed with a ligature.

Before the vagina was reached it was found that the head had sunk down into the brim of the lesser pelvis. This situation of the head greatly embarrassed the approach to the vaginal wall. Dr. Skene pushed the wall of the vagina up into the wound on the handle of a male urethral sound. A small incision was made with the scissors and extended by lacerating with the fingers in a direction parallel with the pelvic brim. The right wall of the cervix was hooked up into the wound with the finger. Version was then attempted, but was found impracticable. The forceps, however, was finally applied to the head after some delay, but not until Dr. Dickinson had lifted it above the pelvic brim with the hand in the vagina. The delivery was completed thirty-five minutes from the beginning of the operation, and the placenta was expelled soon after. The child was a male of 5¾ pounds. The operation was well borne, with but slight shock. The total blood-loss did not exceed the usual amount in normal labor. No vessels were tied. An injection thrown into the bladder returned through the vagina. On examination, the edges of the vesico-vaginal tear could be felt extending obliquely down to the base of the bladder through its margin and then turning abruptly across the urethra just below the vesical junction. The length of the bladder wound was about one inch and a half.

The external wound was closed with seven sutures of sublimated silk. A double soft-rubber drainage-tube was passed through the inner angle of the wound, emerging at the vulva, and a dressing of absorbent cotton applied. A soft catheter was tied in the bladder and the rent left unsutured.

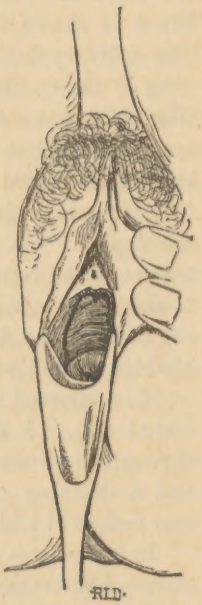
In the course of the night the patient was seized with secondary hemorrhage, and lay for hours in an almost moribund condition. The bleeding was finally controlled, however, by pressure over the external wound, and the subsequent improvement was uninterrupted except by great tympanitic distention of the abdomen and by occasional rise of temperature. The tympanites did not yield to medicinal remedies nor the use of

the rectal tube, and was relieved only by puncture of the intestines with a hypodermic needle. This measure was several times repeated, with, ultimately, complete relief.

The temperature at no time exceeded 102° Fahr., and yielded invariably to thorough antiseptic irrigation of the wound and vagina. On the seventh day and thereafter the urine was passed wholly *per urethram*, and at intervals of three or four hours.

The patient was out of bed in the fourth week, and was discharged at the end of six weeks. The child did well on artificial feeding, and was well nourished and healthy on removal from the hospital.

On examination of the mother before discharge, the cervix was found uninjured. The cicatrix of the vaginal rent was linear. It ran along the vaginal wall very near the cervix, and extended obliquely down to the base of the bladder and across the urethra, as already described. Some degree of vesical irritability remained at the date of discharge. The direction of the cicatrix is shown in the accompanying figure.



On examination of this patient several months after leaving the hospital, the capacity of the bladder appeared to be diminished. The lower segment of the urethra had closed at its upper extremity. The urine was passed from the upper segment at the point of laceration; moreover, there was a partial incontinence, for which, unfortunately, there is no prospect of relief.

Finally, this history would be incomplete without acknowledgment of the skillful services of Dr. R. L. Dickinson in the after-care of the case. To him the recovery was largely due.

Remarks.—Laparo-elytrotomy, as all operators are thus far agreed, compares favorably in simplicity and ease of performance with Cesarean section. At the same time it possesses decided advantages over that operation in the fact

that it avoids the incision of the uterus and of the peritoneum.

There is, therefore, far less shock in laparo-elytrotomy; and septicemia, which figures so prominently in the causes of death after Cesarean section, is a minor danger in the operation of Dr. Thomas.

The only important anatomical difficulty likely to be encountered in making the incisions is the identification and safe division of the transversalis fascia without injury to the peritoneum. This step in the operation is especially difficult when the structures are thickened and matted together by old inflammatory adhesions, as in one of the cases above reported, and in one of Dr. Skene's.

In cases of this kind the difficulty in identifying the structures might undoubtedly be overcome by passing the obturator before incising the transversalis fascia. By cautiously pushing the vaginal wall up into the external wound, the peritoneum could probably be separated before exposing it.

Such a procedure, applied with the fingers at this stage in the operation, would possibly be found useful even in a simple case.

The principal, in fact the only serious, complications of the modern operation have been the bladder wounds. In six out of the twelve operations recorded, the bladder has been torn or cut. It is as yet doubtful whether these accidents are wholly avoidable. Dr. Skene, who has the honor of having achieved the first success and the greatest number of individual successes in this operation, affirms that the bladder injuries are preventable by care in operating. While this is undoubtedly true of injuries by the knife, it is not certain that any care or skill, or any improvement in the technique of the operation, can wholly protect the bladder against laceration.

Bladder tears may occur either during the preliminary dilatation of the vaginal rent, or during the extraction of the child. With sufficient care, the bladder need not be invaded

in enlarging the vaginal wound. The margin of the vesico-vaginal junction should be defined by means of a staff held in the bladder. The rent should be carefully limited anteriorly, and should be carried backward as far as possible without invading the pouch of Douglas. I see no reason why the rent could not be carried across the posterior vaginal wall by first lifting the utero-sacral fold of peritoneum. Much space might thus be gained, and the danger of injuring the bladder before or during the extraction be greatly diminished. During the delivery, as a still further precaution, let an assistant hold his finger at the vesico-vaginal junction in front of the wound to give warning of approaching danger. By thus utilizing all the available space, by extending the vaginal opening with the utmost caution, and by guarding its anterior limit during delivery, vesical injuries, I am sure, would be very rare.

The importance of this complication is, however, as Dr. Skene has said, somewhat diminished by the fact that in all cases thus far, with a single exception, the bladder wound has closed by spontaneous union. And it occurs to me, in view of the tendency to spontaneous closure, as well as the difficulty and added danger of immediate suture, that the immediate closure of the wound by surgical interference, as suggested by Dr. Garrigues, is not called for in mere vesico-vaginal rents.

In one of the foregoing cases the child was extracted below the ureter, and in the other above it. They demonstrate the feasibility of delivery by either method. Extraction below the ureter, I believe, best protects it from injurious pressure or tension, though possibly open to objection from the disturbance of its anatomical relations. In whichever way delivery is accomplished, it is more satisfactory to identify the ureter in the course of the dissection. That the ureter can be readily identified I am convinced from my experience in the first case, and from observations upon a post-mortem delivery by laparo-elytrotomy, reported by Dr. B. F. Westbrook, and which I had the privilege of witnessing.

Yet it must be confessed that the supposed importance of the ureter, in its relations to this operation, is greatly modified by the fact that it has not been injured in the cases thus far reported.

The statistics of laparo-elytrotomy thus far are briefly as follows:

Twelve operations, including the two above reported, have been recorded. Of this number, all but two were done in this country, and six of them in Brooklyn. Six mothers and seven children have been saved. All the maternal deaths were due to the hopeless condition of the patients before operation. In three cases the child was dead before the operation was begun, in one the child died before it was completed, and in each of the fatal cases the death of the child was due to causes with which the mode of delivery had nothing to do.

It is a significant fact that three of the six successful laparo-elytrotomies were done in hospitals, while Cesarean section has been almost invariably fatal as a hospital operation. So far, then, as statistical comparison is practicable, Thomas's operation has a decided advantage over the Cesarean section. The records of both have suffered from the fact that in a large proportion of cases the patient was in a desperate condition before interference.

The following summary presents in brief the history of the modern operation to the present date:

Case I.—1870 (T. G. Thomas, M. D., N. Y.). Patient a multipara, forty years of age. End of the seventh month of gestation. Pneumonia, moribund. Operation in interest of the child only. Right side. Extraction by version. Death in one hour. Child premature, imperfectly developed and hare-lipped; died in one hour.—*Am. Jour. of Obstet., May, 1870.*

Case II.—March 22, 1874 (A. J. C. Skene, M. D., Brooklyn). Primipara, at term. Rhachitic deformity. Conjugate at brim 2½ inches. Previous attempts at delivery by version and by craniotomy. Operation on right side. Death in seven

hours from shock, mainly due to forty-eight hours of hard labor and previous attempts at delivery.—*N. Y. Med. Jour., 1874, vol. xx, p. 401.*

Case III.—October 29, 1875 (A. J. C. Skene, M. D.). Multipara, at term. Rhachitic. Antero-posterior diameter at the brim 2¾ inches. Operation on the right side. Bladder injured. Vesico-vaginal fistula closed by operation November 28, 1875. Recovered. Child saved.—*Am. Jour. of Obstet., February, 1876.*

Case IV.—June 23, 1877 (A. J. C. Skene, M. D.). Primipara, thirty-seven years of age, at full term. Great general deformity. Conjugate at superior strait 1½ inch. Both thighs flexed and hip joints ankylosed. Old pelvic peritonitis. Temperature 102½° before operation. Operation on right side. Bladder wounded. Urinary fistula opening in the groin closed spontaneously August 12th. Mother saved. Child lived eighteen days, and died from causes independent of the operation. —*Am. Jour. of Obstet., October, 1877.*

Case V.—December 3, 1877 (T. G. Thomas, M. D.). Primipara, twenty years of age, dwarf. Conjugate at the brim 2¾ inches. Transverse at outlet 2¼ inches. Operation in Nursery and Child's Hospital, N. Y. Right side. Bladder injured. Round ligament divided. Bladder retentive after twenty days. Recovered. Child saved.—*Am. Jour. of Obstet., April, 1878.*

Case VI.—July 14, 1878 (Thos. Whiteside Hime, M. D., Sheffield, Eng.). Multipara, thirty-seven years old. At term. Cancer of the recto-vaginal septum. A hard drinker. Fatty heart and liver. Operation on left side. Death in two hours. Autopsy showed bladder and peritoneum uninjured. Cervix not lacerated. Child saved.—*London Lancet, November 9, 1878.*

Case VII.—November 23, 1878 (Arthur W. Edis, M. D., London, Eng.). Primipara, twenty years of age, flabby and unhealthy. Conjugate 2½ inches. Right thigh flexed and hip joint ankylosed. Thrombus of right labium major. Operation in British Lying-in Hospital. Right side. Bladder torn, and sutured. Death in forty hours. Child saved.—*British Medical Journal, November 30, 1878.*

CASE VIII.—November 8, 1879 (WALTER R. GILLETTE, M. D., N. Y.). Primipara, twenty-three years old. Dwarf. Rhachitic. Antero-posterior diameter at pelvic inlet 1½ inch. Operation in New York Lying-in Asylum. Right side. Cervix partially dilated by hand and os incised with scissors. Bladder not injured. Recovered. Child putrid.—*Am. Jour. of Obstet., 1880, vol. xiii, p. 98.*

CASE IX.—May 17, 1883 (N. P. DANDRIGE, M. D., Cincinnati, Ohio. *Reported by Dr. Wm. H. Taylor.*) Primipara, thirty-two years old. Antero-posterior diameter at brim below 3 inches. Exhausted by previous attempts at delivery, forceps, version, and craniotomy all having been tried in turn without success. Operation on left side. Death in forty-four hours. At autopsy, bladder and peritoneum found intact; cervix lacerated.—*Jour. Am. Med. Ass'n, August 18, 1883.*

CASE X.—September 1, 1883 (THE WRITER).

CASE XI.—October 4, 1884 (A. J. C. SKENE, M. D.). Primipara, twenty-one years old, at term. Rhachitic. Conjugate at brim less than 2 inches. Operation on left side. Deep epigastric divided. Bladder torn, not sutured. Spontaneous union of bladder wound. Mother and child saved.—*Annals of Surgery, January, 1885.*

CASE XII.—January 26, 1885 (THE WRITER).

To the above record might be added a case of laparo-elytrotomy by J. T. EVERETT, M. D., for the removal of a large calcified fibroid.—*Am. Jour. of Obstet., 1879, vol. xii, p. 700.*